What is claimed is:

1. Electroluminescence light emitting device having multilayer structure deposited on a transparent substrate comprising of

- active light emitting layer,
- hole injecting electrode,
- hole transfer layer,
- electron injecting electrode, and
- electron transfer layer,

said active light emitting layer comprises of organic or organometallic materials, having a *locus* with good energy accepting properties and high light emitting efficiency embedded into a *periphery* with high electronic excitation and energy donating properties, collecting electron and hole charge carriers, producing excited states via the electron-hole recombination process followed by electronic excitation energy transfer from the periphery to the locus (*antenna effect*) and converting the energy into the emitting light, wherein

- said *locus* comprises of the lanthanide ions (Ln^{3+}) in the 3+ oxidative states with electron structure and electron transitions selected such to determine required emitting wavelength with narrow spectral band,
- said *periphery* has hyperbranched dendrimer-like architecture having specific electronic structure providing efficient energy transfer from triplet level of the periphery, that is efficiently excited via electron-hole recombination, to 4f orbitals of the locus, and ensuring spatial separation of the light emitting locus centers preventing concentration self-quenching of their luminescence light emission (*shell-effect*).

2. Electroluminescence light emitting device of Claim 1, wherein said active light emitting layer comprises of light harvesting dendrimers, including dendrimers with pyrenyl and naphthyl groups on the periphery, phenylacetylene-

based dendrimers, porphyrin dendrimers bearing Frechet's poly(aryl ether) wedges, homonuclear Ln^{3+}-based dendrimers, dendrimers with four binuclear building blocks, dendrimers with bis(4-pyridine-2,6-dicarboxylic acid) derivatives, embedded in a highly conductive polymer matrix, such as poly-*p*-phenylene (PPP), poly-*p*-phenylenevenylene (PPV), poly-vynil-carbazole (PVC) and their derivatives or in other conductive polymer matrixes, providing the electron-hole recombination on an external dendrimer shell with consequent energy transfer to said locus by one- or multi-step processes.

3. Electroluminescence light emitting device of Claim 1, wherein said active light emitting layer comprises of a π-electron dendrimer, such as, rubrene-doped N,N′-diphenyl-N,N′-bis(3-methylphenyl)-[1,1′-biphenyl]-4,4′-diamine (TPD), tris(8-quinolinato)aluminum, hyperbranched polycarbazole derivatives, cumarin-based hyperbranched polymers starting with 3-carboxycumarin, polyamide dendrimers containing electron-deficient 5-membered oxadiazole units, providing the electron-hole recombination inside the dendrimer with consequent energy transfer to said locus.

4. Electroluminescence light emitting device of Claim 1, wherein Tb^{3+} ions are used as said locus.

5. Electroluminescence light emitting device of Claim 1, wherein Eu^{3+} ions are used as said locus.

6. Electroluminescence light emitting device of Claim 1, wherein Sm^{3+}ions are used as said locus.